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| Use the Van de Walle text and the TN Math Standards to complete this assignment. If other resources are used in addition, please cite with the URL or bibliographic information. |

*Chapter 13 – Developing Strategies for Multiplication and Division*

1. Students who only have knowledge of the standard multiplication and division algorithms often have difficulty following \_\_\_\_\_\_\_ they do not fully \_\_\_\_\_\_\_\_\_\_\_\_\_\_. When student can compute multidigit multiplication and division problems in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, complete \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of their work, \_\_\_\_\_\_\_\_\_\_ their thinking, and \_\_\_\_\_\_\_\_\_\_ merits of one \_\_\_\_\_\_\_\_\_\_\_\_\_ over another, they are developing as \_\_\_\_\_\_\_\_\_\_\_ learners. (p. 277)
2. Complete the chart. Use the *Number and Operations in Base Ten* Strand.

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| Grade Level:  *Number and Operations in Base Ten* | Find one multiplication and one division standard per grade level  (Copy the standard–code & description– from <https://www.tn.gov/assets/entities/sbe/attachments/4-15-16_V_A_Math_Standards_Attachment.pdf>) |
| 3 | (*only one standard applies*) |
| 4 |  |
| 5 |  |

*Student-Invented Strategies for Multiplication*

1. Multiplication by a Single-Digit Number (p. 279-280)

Include a description of each strategy and model an example of the strategy using the problem 57 x 4. Take a picture of your example and insert.

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|  | Description with Example |
| Complete-Number Strategies |  |
| Partitioning Strategies |  |
| Compensation Strategies |  |

1. What is the cluster problem approach and how can it help students understand multiplication of multidigit numbers? (p. 281-282)

*Standard Algorithms for Multiplication*

1. Begin with Models p. 282-283

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| Area Model | Description of this model: |
| Array Model | Description of this model:  Model solving a problem with an array model – insert a screen shot of a completed problem. <https://play.dreambox.com/student/dbl?atype=2&back=http%3A%2F%2Fwww.dreambox.com%2Fteachertools&eng=Intermediate&id=TeacherTool_Multiplication2DArray&ie_skin=paperfrenzy> |

1. Develop the Written Record (p. 284-285)

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| Partial Products | Description:  Watch the video of 23 x 11 at <https://www.youtube.com/watch?v=mjYYbwuued0>  Describe how the use of the area model is used to visual partial products and avoid errors with recording with regrouping. (p. 284) & figure 13.10 on page 285 |
| Lattice Multiplication | Description:  Study figure 13.11. Use the lattice method to show 43 x 81. Take a picture of your work and insert. |

*Student Invented Strategies for Division*

1. Watch the video showing how a student models dividing 325 by 5 with base 10 blocks <http://www.showme.com/sh/?h=n9zv6W0>

Did she model the partition or fair share concept of division? How do your know? (p. 286).

1. Standard Algorithms for Division (p. 288-291)

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| --- | --- |
|  | Description with Example (work on paper or include screenshots as examples). |
| Partition or Fair-Share Model |  |
| Partial Quotients Using Visual Model |  |
| Explicit-Trade Method |  |
| Repeated Subtraction |  |